

upper rest position until a new cycle is started with a pre-selected weight of dough.--

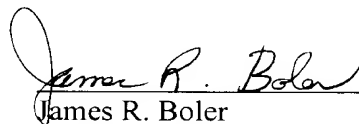
REMARKS

Favorable consideration of this application as presently amended is respectfully requested.

Claims 1-5 have been canceled and claims 6-16 have been added by the present amendment.

A substitute specification and an abstract of the disclosure have been added by the present amendment. No new matter has been added to the application by the present amendment.

Respectfully submitted,



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Marked-Up Copy	
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Prior to examination, please amend the above identified application as follow:

IN THE SPECIFICATION

Page 1 before line 1, please insert --TITLE OF THE INVENTION--;

delete line 1 and replace it with the following: --[U.S. Patent Application "Dough portion control machine from flour and similar"] Dough Portion Control Machine for Flour and Similar Materials--;

line 2, delete the entire line [in the name of Mr. Antonio CIMENTI - Localita Fontane n.3 - I33070 POLCENIGO (PN)];

before line 3, insert:

--BACKGROUND OF THE INVENTION--

--FIELD OF THE INVENTION--;

(0001) lines 3-5, delete the paragraph and replace with the following paragraph: --The present invention relates to a dough portion control machine for flour and similar materials, particularly for pizza-restaurants, bakeries etc., comprising a dough feeding hopper, dough extrusion means and dough weight and/or dimension selective control means.--

before line 6, insert --DISCUSSION OF BACKGROUND--;

(0002) lines 6-8, delete the paragraph and replace with the following paragraph: --[Nowadays] Now days pizzas, bread portions and similar are requested for [a weight up to 1.5] weights up to 1.5 lb. Consequently a plurality of [dough portions] machines adapted to the production of a plurality of pizzas dough portions[.] and bread [different] dough portions [is] are offered to the market of pizza-restaurants, bakeries and so on.--

(0003) lines 9-13, delete the paragraph and replace with the following paragraph: --A known machine [is conceived to select] has been constructed to form dough portions from about 0.1 to maximum 0.7 lb. [Thanks to a single device, which provides a dough portion weight selection device by means] That machine includes a dough portions weight selection device comprised of an outlet cross section funnel adjustment, which is placed [down] downstream with respect to a screw feeder. A motor driven rotating blade is [starting down the screw feeder by means of a sensor] started across the path of travel of the dough portion through the screw feeder in response to the activation of the motor by a sensor. [Where an] An operator can independently select different dough portion weights.--

(0004) lines 14-15, delete the paragraph and replace it with the following paragraph: --Should dough portions of different weight be required, substantially higher than [0,1-0,7] 0.1-0.7 lb., further more sophisticated, expensive and cumbersome machines are necessary.--

before line 16 insert and center --SUMMARY OF THE INVENTION--;

(0005) lines 16-20, delete the paragraph and insert the following paragraph: --[An interesting solution could be offered by the same above mentioned machine, which could offer thanks to a simple device the opportunity to prepare dough portions from 0,1-0,7 lb. to 0,7-1,5 lb. The main advantage of such a solution could be given both by reduction of the space, which should be required in presence of a plurality of different machines and by a substantial cost reduction for more than one equipment.] A solution is provided by modifying the above mentioned machine so that it may be used to prepare dough portions from 0.1-0.7 lb. to 0.7-1.5 lb. The main advantages of this solution are (1) a reduction in the amount of space needed, --i.e., the reduction in the number of different machines needed, and (2) a substantial cost reduction due to the reduction in the number of different machines needed.--;

(0006) lines 21-28, delete the paragraph and insert the following paragraph: --[Such a problem is solved by the machine according to the invention, which is characterized in that extrusion means are adapted to co-operate with dough cutting means and with extruded dough portion control means, said extrusion means being adapted to produce together with said cutting means and with control means dough portion which could be even substantially heavier than for instance 0.7 lb., interchangeability means of said extrusion means with further extrusion means being provided on the same machine structure for dough portion production, which could be even lighter than 0,7 lb., for instance within a range 0.1-0.7 lb., with the advantage to prepare dough portion comprised within a range of 0.1-1,5 lb. and even heavier.] The problem is solved by a machine according to the present invention, which is characterized by extrusion apparatus adapted to co-operate with dough cutting apparatus and with extruded dough portion control apparatus. The extrusion apparatus is adapted to produce, together with the cutting apparatus and with the control apparatus, a dough portion which could be substantially heavier than 0.7 lb. The machine of the present invention includes an extrusion apparatus that is interchangeable with further extrusion apparatus on the same machine structure for dough portion production which could be lighter than 0.7 lb., for instance within a range of 0.1-0.7 lb. The interchangeability of one extrusion apparatus for another extrusion apparatus provides the advantage of providing a machine adapted to prepare a dough portion comprised within a range of 0.1-1.5 lb. and even heavier.--;

before line 29 insert --BRIEF DESCRIPTION OF THE DRAWINGS--;

(0007) line 29-page 2 line 6, delete the paragraph and insert the following paragraph: --[Said and further characteristics will be apparent from the following description and the alleged drawings, where.

Fig. 1 represents Fig. 1 of Italian Patent No.01253370;

Fig. 2 represents a perspective view of machine according to the invention;

Figs. 3a, 3b represent respectively a front view of machine according to the invention in correspondence of a starting phase, as well as an enlargement of a particular device of the same machine taken in a plant view;

Fig. 4 represents a front view of the machine according to the invention in correspondence of a second operation phase of the same machine;

Fig. 5 represents a perspective view of a partial interior of the machine according to the invention.] The above-noted and further advantages of the invention will be apparent from the following description and the accompanying drawings, wherein:

Fig. 1 is a copy of Fig. 1 of Italian patent No. 01253370;

Fig. 2 is a perspective view of the machine according to the present invention;--

Fig. 3a is a front view of the machine according to the present invention corresponding to the starting phase thereof;

Fig. 3b is an enlargement of a portion of the machine shown in Fig. 3a taken in plan view;

Fig. 4 is a front view of the machine according to the invention corresponding to a second operation phase thereof; and

Fig. 5 is a perspective view of a partial interior of the machine according to the invention.--;

delete line 7 and replace with the following: --[DESCRIPTION] --DETAILED DESCRIPTION OF THE INVENTION--;

(0008) lines 8-12, delete the paragraph and replace with the following paragraph: --[The machine according to the invention comprises a hopper 1 (Figs. 2, 3, 4) for storage and processing of dough, from which single portions are obtained. Said machine comprises also a

screw feeder 2 (Fig. 5). This latter represents extrusion means, which are described and represented in detail with 21, 22, 211, 221 (Fig. 1) also in the Italian Patent No.01253370 issued on August 6, 1995.] The machine according to the present invention comprises a hopper 1, shown in Figs. 2-4, for storage and processing of dough, from which single portions are obtained. The machine also comprises a screw feeder 2 shown in Fig. 5. The structure shown in Fig. 5 comprises an extrusion apparatus indicated by reference numerals 21, 22, 211, 221 in Fig. 1 of the present application and also in Fig. 1 of the Italian patent No. 01253370 issued August 6, 1995.--;

(0009) lines 13-14, delete the paragraph and replace with the following paragraph: --[Said screw feeder 2 (Fig. 5) is adapted to operate thanks to an electric motor, which is settled externally with respect to the machine and which is not represented in the drawings.] A screw feeder 2 illustrated in Fig. 5 is operated by an electric motor located externally with respect to the machine and not illustrated in the drawings.--;

(0010) lines 15-18, delete the paragraph and replace with the following paragraph: --[A cone-shaped horizontal distributor 3 (Figs. 3a, 3b, 4) is represented in correspondence of the end of a cover 4 of the screw feeder 2, which allows the dough to leave the machine. The single portions of different weight and dimensions are obtained thanks to the pressure exerted by screw feeder 2 into the cover 4, and thanks to further devices, which will be apparent forwards.] A cone-shaped horizontal distributor 3 illustrated in Figs. 3a, 3b, and 4 is associated with the downstream end of a cover 4 of the screw feeder 2. The distributor 3 allows the dough to leave the machine. Single portions of dough of different weights and dimensions are obtained based on (1) the pressure exerted by the dough fed by the screw feeder 2 within the cover 4 and (2) in cooperation with additional devices described below.--;

(0011) lines 19-21, delete the paragraph and insert the following paragraph: --[Distributor

3 is fixed to a vertical wall 5 (Figs.3a, 4, 5), for instance by means of two handwheels 6. Said handwheels allow a simple disassembly from the machine of distributor 3, whereby further different distributors 3 can be assembled, as it will be explained forwards.] Distributor 3 is fixed to a vertical wall 5 shown in Figs. 3a, 4, and 5 by suitable fasteners such as the two handwheels 6. The handwheels allow a simple disassembly of a distributor 3 from the machine and the assembly of further different distributors 3 to the machine as explained further below.--;

(0012) lines 22-25, delete the paragraph and insert the following paragraph: --[Distributor 3 is adapted to produce dough portions having a weight comprised within a range of 0.7-1.5 lbs. and even more. Distributor 3 represents means adapted to render the machine compatible with performances of a machine, which could produce dough portions substantially lighter than 0.7 lb.] Distributor 3 is adapted to produce dough portions having a weight comprised within the range of 0.7-1.5 lb. and even more. Distributor 3 comprises structure adapted to render the machine compatible with the performance of a machine equipped to produce dough portions substantially lighter than 0.7 lb.--;

(0013) lines 26-28, delete the paragraph and insert the following paragraph: --[Distributor 3 presents a cone-shaped section outlet and is provided with a longitudinal axis substantially inclined on a vertical plane (Fig. 3b) with respect to longitudinal development of the machine due to overall dimensions, as it will be apparent forwards.] Distributor 3 comprises a coned-shape section outlet. The distributor 3 due to its overall dimensions, is provided with a longitudinal axis substantially inclined in a vertical plane with respect to the longitudinal development of the machine as best shown in Fig. 3b and as further discussed below--;

(0014) lines 29-33, delete the paragraph and insert the following paragraph: --[The screw feeder 2, which is inside cover 4, and distributor 3 represent extrusion means of the machine

according to the invention, whereas handwheels 6 represent interchangeability means of distributor 3 with different distributors, which are adapted to produce different weight and dimension dough portions, for instance also lower with respect to dough portions, which are produced by the machine according to the invention.] The screw feeder 2, which is inside cover 4, and distributor 3 comprise the extrusion apparatus of the machine according to the present invention. The handwheels 6 comprise the interchangeability apparatus adapted to interchange one distributor 3 for other different distributors. The different distributors are adapted to produce dough portions having different weights and dimensions.--;

(0015) lines 34-38, delete the paragraph and insert the following paragraph: --[A paddle 7 (Figs.3a, 4) is fixed by means of a stud 8 inside a notch which is obtained on a cylindrical block 9. Paddle 7 (Fig. 3b) is adapted to slide in a way known per se forwards or backwards with respect to longitudinal development of the machine, together with block 9, thanks a handle 10 (Fig.2), so that an operator is allowed to select the amount of dough, which should form a portion weight, as it will be explained forwards.] A paddle 7 shown in Figs. 3a and 4 is fixed to a cylindrical block 9 by structure such as a stud 8 retained in a notch in the cylindrical block 9. The paddle 7 shown in Fig. 3b is adapted to slide together with the block 9 in a known way per se forward or backward with respect to the longitudinal development of the machine. The handle 10 shown in Fig. 2 is connected to the block 9. The paddle 7 slides forward or backward with respect to the longitudinal development of the machine depending upon the direction of rotation of the handle 10. By adjusting the paddle location, an operator is allowed to select the amount of dough required to form a desired dough portion weight.--;

(0016) line 39-page 3 line 3, delete the paragraph and insert the following paragraph: --
[Handle 10 represents weight and/or dimension dough portions selective control means. In addition paddle 7 is adapted to turn on (in a forward direction) just a bit due to pressure of

dough, which leaves distributor 3, whereby it can act on a microswitch (not represented in the drawings), which is adapted to make an electric motor 11 (Figs. 3a, 4) start. The motor 11 should transmit by means of a reduction gear 12 a rotation of 360° in the direction of arrow A to a shaft 13. A cam 14 is fixed on said shaft 13.] Handle 10 provides a weight and/or dimension dough portion selective control apparatus. In addition, paddle 7 is adapted to turn slightly in the forward direction due to the pressure thereon of the dough leaving the distributor 3. The slight turning of the paddle 7 in the forward direction acts on a microswitch (not shown) to actuate an electric motor 11 shown in Figs. 3a and 4. The electric motor 11 drives a reduction gear 12 to rotate the shaft 13 one revolution (360°) in the direction of the arrow A. A cam 14 is fixed on the shaft 13.--;

(0017) Page 3 lines 4-7, delete the paragraph and insert the following paragraph: --

[Rotation of cam 14 is transmitted by shaft 13 to a blade 16 (Fig. 3a), which represents dough cutting means of the machine according to the invention. Fig. 3a shows rest position of blade 16, which is adapted to rotate clockwise in order to cut a dough worm, which leaves distributor 3. Fig. 4 shows blade 16 after cutting dough worm.] --Rotation of the shaft 13 is transmitted to a blade 16 shown in Fig. 3a. The blade 16 represents the dough cutting apparatus of the machine according to the present invention. Fig. 3a shows the rest position of the blade 16. The blade 16 is adapted to rotate in a clockwise direction in order to cut a dough worm leaving distributor 3. Fig. 4 shows the position of the blade 16 after cutting the dough worm.--;

(0018) lines 8 and 9, delete the paragraph and insert the following paragraph: --[A further microswitch arranged on shaft 13 and not represented in the drawings, should stop in a way known per se shaft 13 rotation after just one revolution.] Another microswitch (not shown) arranged on shaft 13 stops rotation of the shaft 13 in a known way after just one revolution.--;

(0019) lines 10-14, delete the paragraph and insert the following paragraph: --[A square 17 is adapted to co-operate with cam 14, which is represented in Fig. 3a in a rest device position. Square 17 is adapted to rotate on a block 18, which is fixed to wall 5 of the machine according to the invention and adheres to cam 14 profile by means of a spring 24. As soon as motor 11 starts, a rotation is transmitted to shaft 13, cam 14 makes square 17 rotate in the direction of arrow B and causes in a way known per se rotation of a shaft 26, on which a support 27 is fixed.] A square 17 is adapted to cooperate with cam 14. The square 17 is shown in Fig. 5 in its rest position. Square 17 is adapted to rotate on a block 18. The block 18 is fixed to wall 5 of the machine. One end of the square 17 is biased against the cam 14 by a spring 24. Upon actuation of the motor 11, rotation is imparted to the shaft 13. The square 17, following the profile of the cam 14, rotates in the direction of the arrow B. Rotation of the square 17 causes, in a known way per se, rotation of shaft 26. Support 27 is fixed on shaft 26.--;

(0020) lines 15-18, delete the paragraph and insert the following paragraph: --[Support 27 represents support means of dough worm, which leaves screw feeder 2 until blade 16 is cutting said worm, avoiding in such a way that dough portion falls down. Operator should have previously selected dough dimensions after fixing axial position of block 9 thanks to handle 10 (Fig.2), as it was explained before.] Support 27 provides support for the dough worm leaving the screw feeder 2 until the dough worm is cut by the blade 16 as explained above. The operator previously selected the dough dimensions by fixing the axial position of block 9 through operation of the handle 10 shown in Fig. 2.--;

(0021) lines 19 and 20, delete the paragraph and insert the following paragraph: --[Cam 14, square 17, shaft 26 and support 27 represent extruded dough portion control means of the machine according to the invention.] The cam 14, the square 17, the shaft 26, and the support

27 comprise extruded dough portion control apparatus of the machine according to the invention.--;

(0022) delete line 21 and replace with the following: --[The machine operates according the following way.] --The machine operates as follows:--;

(0023) lines 22-26, delete the paragraph and replace with the following paragraph: --[After dough is leaving screw feeder 2, it goes along distributor 3 and encounters paddle 7. This latter assumes an axial position (in a longitudinal direction of the machine) together with block 9, which corresponds to choice of pre-selected dough portion amount. Such a pre-selection is obtained by adjusting handle 10 (Fig. 2). This latter is provided with notches, which allow the operator to select a precise dough portion amount.] After the dough leaves screw feeder 2, it is forced through distributor 3, and it encounters paddle 7. Paddle 7, mounted on block 9, assumes an axial position (in a longitudinal direction of the machine) which corresponds to the choice of a pre-selected dough portion amount. The pre-selection amount is determined by adjusting the handle 10 shown in Fig. 2. The handle cooperates with notches that allow the operator to select a precise dough portion amount.--;

(0024) lines 27-32, delete the paragraph and replace with the following paragraph: --[Paddle 7 is turning on just a bit as soon as dough worm encounters it. Such a rotation make a microswitch activate, whereby motor 11 is starting and makes shaft 13 and cam 14 rotate 360°. Blade 16 is consequently rotating and a pre-selected dough portion is cutted. Such a portion could fall down into a container not represented in the drawings, should support 27 didn't collect it and keep it close to distributor 3. As soon as shaft 13 is rotated 360° a further microswitch stops shaft 13.] The paddle 7 turns slightly as soon as the dough worm encounters it. The slight rotation of the paddle 7 closes a first microswitch (not shown) and actives motor 11. The motor 11 rotates the shaft 13 and cam 14 through 360°. Blade 16

rotates along with cam 14 and shaft 13 and cuts a pre-selected dough portion. The dough portion could fall down into a container (not shown); however, support 27 engages it and keeps it closes to the distributor 3. After the shaft 13 rotates through 360°, a second microswitch (not shown) stops rotation of the shaft 13.--;

(0025) lines 33-38, delete the paragraph and replace with the following paragraph: --[The dough worm, which leaves distributor 3, could now fall down or could bend before blade 16 cuts it. As explained, in order to avoid such a drawback, support 27 collects dough and keeps it until blade 16 cuts the pre-select dough amount. All this thanks to square 17 rotation in B direction, which happens as soon as blade 16 has cutted the pre-selected dough portion. After such an operation support 27 rotates clockwise (Figs. 3a, 4), releases cutted dough portion and makes said portion fall down into a container.] As the dough worm leaves distributor 3, it could fall down or it could bend before the blade 16 cuts it. However, as explained above, in order to avoid such a drawback, the support 27 engages the dough and supports it until blade 16 cuts the pre-selected dough amount. The square 17 rotates in the B direction as soon as the blade 16 has cut the pre-selected dough amount. That is, after the blade 16 has cut the pre-selected dough portion, support 27 rotates clockwise as shown in Figs. 3a and 4 to release the cut dough portion. The cut dough portion falls down into a container.--;

(0026) line 39-page 4 line 2, delete the paragraph and replace with the following paragraph: --[It is to be pointed out that structure of the machine according to the invention is substantially not so different from the machine claimed in the cited Italian Patent. The main difference between two machines is given both by distributor 3, which is now in the condition to supply dough portions heavier than 0.7 lb. and all devices, which were explained up to now: shaft 13, cam 14, square 17, support 27 as well as all microswitch not represented in the drawings but functionally explained.] The structure of the machine according to the present

invention is similar to the machine disclosed and claimed in the cited Italian patent. The main differences between the two machines reside in (1) the distributor 3, which is capable of supplying dough portions heavier than 0.7 lb. (i.e., up to 1.5 lb. and even heavier), (2) the shaft 13, (3) the cam 14, (4) the square 17, (5) the support 27, and (6) the microswitches (not shown) but functionally described.--;

(0027) Page 4 lines 3-10, delete the paragraph and replace with the following paragraph: --

[The different dimensions of distributor 3 have to be coupled with its longitudinal axis, which should be now substantially rightwards inclined in Figs. 3a, 3b, 4. Reasons of such an inclination are depending on the fact that, in such a way blade 16, which is provided with the same blade dimensions claimed in the already cited Italian Patent, could cut the entire dough amount, which leaves the screw feeder 2. Otherwise, i.e. if the distributor 3 was conceived provided with the substantially right longitudinal axis, cutting capacity of blade 16 should have been increased, and consequently structure of the new machine with respect of machine claimed in the cited patent should have been different, particularly increased.] The transverse cross-sectional dimensions of the distributor 3 decrease along its longitudinal axis from its end coupled to the cover 4 toward its exit end. The distributor 3 is substantially inclined from left to right as illustrated in Figs. 3a, 3b, and 4. The reason for the inclination is that the blade 16 is provided with the same dimensions as the blade used in the known machine disclosed in the cited Italian patent. The inclination allows the blade 16 to cut the entire dough amount that leaves the screw feeder 2 and distributor 3. If the distributor 3 were not provided with the noted inclination, the cutting capacity (i.e., the length) of the cutting blade 16 would have to be increased. As a consequence, the structure of the blade 16 in the new machine would be different than the structure of the blade in the machine disclosed in the cited patent.--;

(0028) lines 11-13, delete the paragraph and insert the following paragraph: --[Therefore distributor 3 represents as well as its inclined longitudinal axis, means adapted to get the machine according to the invention compatible with a machine adapted to produce dough portions substantially lower than 0.7 lb.] --Therefore, distributor 3 with its inclined longitudinal axis provides distributor structure coupled to the cover 4 in the machine made according to the present invention which is compatible with the distributor structure coupled to the cover 4 of a machine adapted to produce dough portions substantially lower than 0.7 lb.--;

(0029) lines 14-19, delete the paragraph and insert the following paragraph --[When the machine according to the invention should be adapted to a production of dough portions lighter than a weight comprised within a range of about 0.7-1.5 lb. and more, handwheels 5 should be unscrewed, distributor 3 should be disassembled from machine frame and changed with a different distributor, for instance with distributor, which is described with n.3 in Fig. 1 of already cited Italian patent. Such a distributor allows production of dough portions, which are substantially lighter and comprised within a range of about 0.1-0.7 lb.] When the machine according to the present invention is to be adapted to a production of dough portions lighter than a weight comprised within a range of about 0.7-1.5 lb. and more, handwheels 6 are unscrewed, distributor 3 is disassembled from the machine frame, and it is exchanged for a different distributor, for instance, the distributor 3 shown in Fig. 1 of the above-cited Italian patent. That distributor allows production of substantially lighter dough portions within the range of about 0.1-0.7 lb.--; and

(0030) lines 20-23, delete the paragraph and insert the following paragraph: --[Therefore the main advantage, which is offered by the machine according to the invention, is represented by the fact that pizza-restaurants are not required to be equipped with more than

one machine for production of dough portions comprised within a range of 0.1-1.5 lb. No further investments are necessary besides cost of just one machine.] --Therefore, the main advantage offered by the machine according to the present invention is the fact that pizza-restaurants are not require to be equipped with more than one machine for the production of dough portions comprised within a range of 0.1-1.5 lb. The restaurant owners investment cost are therefore reduced.--